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The Third International After Lenin. 2d Ed. Translated by John G. Wright.  
New York, Pioneer, 1957.  
XII, 100 P.

114.13

1/1

12

BARAN, M.A., dots., kand.med.nauk; KOSACHEVSKAYA, P.G.[Kosachevs'ka, P.H.],  
assistant; TROTSKIY, Yu.A. [Trots'kyi, IU.A.], dots., kand.med.nauk

Care of the skin. Nauka i zhyttia 11 no.2:33 P '61. (MIRA 14:3)  
(SKIN--CARE AND HYGIENE)

BARAN, M.A.; KOSACHEVSKAYA, P.G. [Kosachevs'ka, P.H.]; TROTSKIY, Yu.A.  
[Trots'kyl, Yu.A.]

Don't eat much at night. Nauka i zhyttia 11 no.2:33 P '61.  
(MIRA 14:3)

(DIET)

BARAN, M.A.; KOSACHEVSKAYA, P.G. [Kosachevs'ka, P.H.]; TROTSKIY, Yu.A.  
[Trots'kyi, IU.A.]

Save the vitamin "C" in food. Nauka i zhyttia 11 no.2:33 P '61.  
(MIRA 14:3)

(ASCORBIC ACID)

TROTSKIY, Yu.A. [Trots'kyi, IU.A.], dotsent, kand.med.nauk;  
BARAN, M.A., dotsent, kand.med.nauk

Animal and vegetable fats. Nauka i zhyttia 11 no. 4:51 Ap '61.  
(MIRA 14:5)  
(Oils and fats, Edible)

ACC NR: AP6033663

SOURCE CODE: UR/0119/66/000/010/0011/0013

AUTHOR: Verbitskiy, I. P. (Engineer); Mel'nikov, V. I. (Engineer); Rozen, Yu. V. (Engineer); Trotsko, G. G. (Engineer)

ORG: none

TITLE: Frequency adders |66

SOURCE: Priborostroyeniye, no. 10, 1966, 11-13

TOPIC TAGS: frequency analyzer, transistorized circuit, frequency meter, *FREQUENCY CONVERTER*

ABSTRACT: A device that converts frequencies in the 4—8 kc range into pulses and counts these pulses is described. The input signal frequency is divided 80 times. The resultant frequency, 50—100 kc, is then applied to a circuit that subtracts 50 cycles. The 0—50 cps, output frequency is subsequently divided 180 times, applied to a monostable multivibrator, and counted either with a fast acting counter or an automatic recorder. The operating temperature range of the device is 5—50 C; supply voltage tolerances are +10—15%. The circuitry of the device is transistorized and packaged in modular form. Orig. art. has: 5 figures.

SUB CODE: 014/ SUBM DATE: none/ ORIG REF: 004

Card 1/1

UDC: 681.142.642.2

GULINOVA, I.G., kand. tekhn. nauk; TROTSKO, T.T., inzh.

Lowering the expenditure of lime in making autoclave-hardened  
silicate products. Nov. v prozv. stroi. mat. no.1:5-12 '59.  
(MIRA 12:12)

(Silicates) (Lime)

YAKOVENKO, O.I., inzh.; TROTSKO, T.T., inzh.

Effect of the shape and size on the strength of ceramic products.  
Nov. v proizv. stroi. mat. no.1:145-169 '59.

(MIRA 12:12)

(Ceramics--Testing)



24

370R

10716\* Articles With Crystalline and Glass-Like Structures From Low-Fusion-Point Clays. (Russian.) E. M. Kalenov and T. T. Trotska. *Steklo i Keramika*, v. 9, Apr. 1952, p. 3-8.

Discusses the use of above clays as raw materials in the ceramic and glass industry. Research has been undertaken in several glass factories and institutions to test the suitability of Spondil clays for the manufacture of glass tubing, bottles, foam glass, mineral wool, and other vitreous and crystalline products. Some details of tests with two typical clays (Stalkovsk and Petrovsk) are given, the former containing 33.58%  $\text{SiO}_2$  and 27.51%  $\text{CaO}$  and the latter with 53.22% and 11.97%, respectively. Facing bricks or slabs, tiles, and insulating material for strength equal to that of structural glass were made, to which glaze or enamel can be added.

S/081/60/000/014/006/009  
A006/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 14, p. 352, # 57850

AUTHORS: Yakovenko, O.I., Trotsko, T.T.

TITLE: On the Effect of the Shape and Dimensions on the Strength of  
Ceramic Products

PERIODICAL: V sb.: Novoye v proiz-ve stroit. materialov, No. I, Kiyev, Gos-  
stroyizdat UkrSSR, 1959, pp. 145-169

TEXT: Results of investigations are given which were carried out to  
determine the effect of the shape and dimensions of ceramic specimens on their  
strength during compression. It was established that ceramic articles possessed  
anisotropic properties. The strength of the ceramic specimens was by 8 - 10%  
higher when the direction of the destructive force was perpendicular to the  
force condensing the mass in the press. The strength of specimens decreased  
with their greater absolute dimensions. The strength of massive specimens was  
higher than that of hollow specimens of equal volume. The correlation between  
the shape and strength of the material was established by introducing the notion

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S/081/60/000/014/006/009  
A006/A001

On the Effect of the Shape and Dimensions on the Strength of Ceramic Products

of the coefficient of shape (the ratio of the cross-sectional surface to the sum of lateral faces of the work). The coefficient of shape is the higher the lower the height of the specimen. In compression, the strength increases with a higher coefficient of shape. ✓

From the author's summary

Translator's note: This is the full translation of the original Russian abstract.

Carl 2/2

BUDNIKOV, P.P., akademik; GULINOVA, L.G., kand. tekhn. nauk;  
TROTSKO, T.T., kand. tekhn. nauk; ARTEMSEV, V.P., inzh.;  
MARCHENKOVA, N.M., inzh.

Obtaining silicate-slag concrete products using two-stage  
hydrothermal hardening. Stroi. mat. 9 no.5:8-9 My '63.  
(MIRA 16:7)

1. Akademiya nauk UkrSSR (for Budnikov).  
(Sand-lime products)

ZHUKOV, A., kandidat tekhnicheskikh nauk; KALENOV, Ye., inzhener; ~~TROTSKO, T.,~~  
inzhener.

Obtaining porous lightweight concretes from clays. Stroi.mat.isdel.1  
konstr. 1 no.9:26-27 S'55. (MLRA 9:1)  
(Lightweight concrete)

GULINOVA, L.G., kand.tekhn. nauk; SKATYNSKIY, V.I., kand.tekhn.nauk;  
TROTSKO, T.T., inzh.

Large autoclave-hardened silicate wall blocks. Nov. v stroi. tekhn.  
no.12:65-90 '57. (MIRA 11:1)  
(Building blocks) (Silicates)

TROTSKO, T.T.

Autoclave-hardened coarse porous silicate concrete made with  
lightweight aggregates. Stroi.mat. 5 no.12:20-22 D '59.  
(MIRA 13:3)

(Lightweight concrete)

KALENOV, E. M.; TROTSKO, T. T.

KALENOV, E. M.; TROTSKO, T. T.

Glass Manufacture

Manufactured articles of crystal and glass-like structure from easily melted clays.

Stek. i ker. 9 No. 4, 1952

9. Monthly List of Russian Accessions, Library of Congress, August 1956, 2Uncl.



ZHUKOV, Arkadiy Vladimirovich, kand.tekhn.nauk; KALENOV, Yevgeniy Mikhaylovich, inzh.; TROTSKO, Taisiya Timofeyevna, inzh.; TEPLYAKOVA, A., red.; IOAKIMIS, A., tekhn.red.

[Porous materials and aggregates for lightweight concretes] Poristye materialy i zapolniteli dlia legkikh betonov. Kiev, Gos.izd-vo lit-ry po stroit. i arkhit., 1958. 108 p. (MIRA 12:3)  
(Lightweight concrete)

KALENOV, Ye.M.; TROTSKO, T.T.

Shapes of crystalline and vitreous structure from easily fusible clays.  
Steklo i Keram. 9, No.4, 3-8 '52. (MLRA 5:5)  
(CA 47 no.19:10189 '53)

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29432  
S/081/61/000/017/091/166  
B101/B102

AUTHOR: Trotsko, T. T.

TITLE: Cementless coarse-pored autoclave silicate concrete

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 17, 1961, 354, abstract  
17K361 (Dokl. Mezhvuz. konferentsii poizuch. avtoklavn.  
materialov i ikh primeneniya v str-ve. L., 1959, 222 - 227)

TEXT: A coarse-pored silicate concrete of compositions from 1:2.5 to 1:10 (volume ratio of the lime-sand mass : workability agent) with a lime consumption of 60 - 25 kg/m<sup>3</sup> was produced on the basis of a mixture of ground unslaked lime, finely ground additives, and artificial, light workability agents. The amount of water including the water content in the workability agents was up to 20%. The workability agents were mixed in dry state with the lime-sand mass. The specimens were packed by vibration. The strength limit of Termozit concrete was 20 - 45 kg/cm<sup>2</sup> at a specific weight of 1.0 - 1.4 tons/m<sup>3</sup>; that of Keramzit concrete was

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Cementless coarse-pored...

29132  
S/081/61/000/017/031/166  
B101/B102

15 - 95 kg/cm<sup>2</sup> at 0.8 - 1.3 tons/m<sup>3</sup>, and that of pozzolan concrete was  
20 - 140 kg/cm<sup>2</sup> at 1.2 - 1.7 tons/m<sup>3</sup>. [Abstracter's note: Termozit and  
Keramzit are artificial workability agents based on clays.] The heat con-  
duction coefficient  $\lambda = 0.32 - 0.5$  kcal/m·hr·deg does not only depend on  
the specific weight of the concrete but also on the type of workability  
agent and its granulation. With equal specific weight, coarse-pored  
Keramzit concrete has minimum heat conductivity. [Abstracter's note:  
Complete translation.]

X

Card 2/2

TROTSYUK, Petr Artemovich; IZBITSKIY, L.M., red.; LIFEROVA, A.I., red.  
izd-va; KOZLENKOVA, Ye.I., tekhn. red.

[Auditing of subcontractor building organizations and the enterprises  
of cooperative societies] Reviziia podriadnykh stroitel'nykh organi-  
zatsii i predpriatii potrebitel'skoi kooperatsii. Moskva, Izd-vo  
TSentrosoiuza, 1960. 108 p. (MIRA 14:11)  
(Construction industry—Auditing and inspection)

TROTSYUK, V. Ya.

Two types of geomorphologic expressions of the Upper Quaternary uplifts in valleys of the rivers of the Kura-Aras Lowland. Neftgaz, geol. i geofiz. no.11:35-38'63 (MIRA 17:7)

1. Nauchno-issledovatel'skaya laboratoriya geologicheskikh kriteriyev otsenki perspektiv neftegazonosnosti.

TROTT, J. R.; BANOCZY, Jolan

The oral mucosa and keratinization. Acta Morph. Acad. Sci. Hung. 11  
no.2:217-228 '62.

1. Faculty of Dentistry, University of Manitoba, (Director: J. W.  
Neilson) Winnipeg, Canada, and Dept. of Oral Surgery, University Medi-  
cal School, (Director: Prof. K. Balogh) Budapest.

(MOUTH pathol) (KERATOSIS pathol)

**Determination of various compounds in urine.** J. Trotzki and R. Mandelsson (*Urbw. Hygien. J.*, 1906, 8, 157-161) and H. Urina (10-20 c.c.) + water (10 c.c.) is treated with Pb acetate (8 c.c.), 18% NaOH (1 c.c.), and water (44 c.c.). After quant. titration, addition of 5 c.c. of Pb acetate and 1 c.c. of NaOH, the liquid is filtered and 30 c.c. are distilled with 1 c.c. of 10% acetic acid and 20 c.c. of water, the acetone being collected in  $H_2O$  (10 c.c.), 18% NaOH (10 c.c.), and 0-01N-I (20 c.c.). When boiling begins, 1 c.c. of conc.  $H_2SO_4$  + 5 c.c. of 2%  $K_2Cr_2O_7$  are introduced dropwise into the distilling flask, and 5 c.c. of  $K_2Cr_2O_7$  are added every 5 min. After 20 min, the distillate is treated with 5 c.c. of conc. HCl, and titrated with  $Na_2S_2O_3$  after 5 min. The method is more generally applicable than Engblom's method. Ch. Ass. (#)



10. Determination of ketones in urine. J. Tabor  
 and E. H. Himmelfarb (Ukrain. Biochem. J., 1938, 9,  
 No. 1, 187—189).—The urine is treated first with  
 $\text{Pb}(\text{OAc})_2$  and aq.  $\text{NH}_3$  and then with  $\text{Pb}(\text{OAc})_2$   
 and  $\text{NaOH}$ . The  $\text{COMe}$  in a portion of the filtrate  
 acidified with  $\text{AcOH}$  is distilled into aq.  $\text{NaOH}$ ,  $\text{K}_2\text{Cr}_2\text{O}_7$ ,  
 and  $\text{H}_2\text{SO}_4$  being added to the distillation flask at  
 intervals. W. O. K.

TRUTZKI, J.

n. 117190120, Ukrain Film Khr, 1936, 11, 410-413

BC 17-1

TEST AND INS CODES PROCESSED AND PROPERTIES INDEX

1. Variation of state and the heat of phase transformation in solid bodies. J. A. Troitskiy (U.S.S.R., 1936, 6, 133—136).

—The formula  $\phi = \frac{1}{2}R(T_1 - T_2)$  is derived thermodynamically, where  $\phi$  = the heat of transformation from phase I to phase II, and  $a_1$  and  $a_2$  are the linear expansion coeffs. of I and II. The calc. val. for the  $\gamma \rightarrow \beta$  transition in Fe is 378 kg.-cal. per g.-atom; the observed val. is 372 kg.-cal. (N. Am. (p))

A 50.514 METALLURGICAL LITERATURE CLASSIFICATION

SECTION 1	SECTION 2	SECTION 3	SECTION 4	SECTION 5	SECTION 6	SECTION 7	SECTION 8	SECTION 9	SECTION 10	SECTION 11	SECTION 12	SECTION 13	SECTION 14	SECTION 15	SECTION 16	SECTION 17	SECTION 18	SECTION 19	SECTION 20	SECTION 21	SECTION 22	SECTION 23	SECTION 24	SECTION 25	SECTION 26	SECTION 27	SECTION 28	SECTION 29	SECTION 30	SECTION 31	SECTION 32	SECTION 33	SECTION 34	SECTION 35	SECTION 36	SECTION 37	SECTION 38	SECTION 39	SECTION 40	SECTION 41	SECTION 42	SECTION 43	SECTION 44	SECTION 45	SECTION 46	SECTION 47	SECTION 48	SECTION 49	SECTION 50
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COMMON ELEMENTS										TEST AND THE ORDER										PROCESSES AND PROPERTIES INDEX										TEST AND THE ORDER									
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<p><b>Creatinuria after ingestion of meat during the exhaustion of carbohydrate supplies in the organism. S. I. VINOGRADOV and J. A. TROTSKI (Ukrain. Biochem. J., 1936, 9, 583-591).—Marked creatinuria results when meat is eaten after physical exercise performed under such conditions that the carbohydrate store is exhausted, but does not occur when the store is maintained by previous ingestion of carbohydrate. F. A. A.</b></p>																																							
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A method for studying the thermal expansion of steels.  
V. A. Trutskii and E. G. Shvilkovskii. Zvezdika 145  
J. 1092-101 (1934). The preliminary communication is  
confining to a review of the existing methods with over 40  
literature references and a brief description of a proposed  
simplified dilatometer (illustrated). Chas. Blanc

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

2

Equation of state and the heat of phase transformation in solid bodies. Ya. A. Trotskii *J. Tech. Phys. (U.S.S.R.)* 6, 125-30(1936) —Potential energy, interat. forces, etc., are discussed, and the formula  $Q = gRT^2(2a_1 - 3a_2)$  is derived on thermodynamic bases, where  $a_1$  and  $a_2$  are the linear expansion coeffs. before and after transformation. The heat of transformation  $Q$  for the  $\gamma \rightarrow \delta$  iron phase change is calcd. as 375 Cal./g. atom compared with 372 Cal. found experimentally by Durrer (Dissertation-Aachen 1915).  
P. H. Rathmann

ASO-SEA METALLURGICAL LITERATURE CLASSIFICATION

Equation of state and the heat of phase transformation in solid bodies. Ya. A. Trutskii. *J. Tech. Phys.* (U. S. S. R.), 6, 125-36 (1936) = Potential energy, internal forces, etc., are discussed, and the formula  $Q = gRT(2\alpha_1 - 3\alpha_2)$  is derived on thermodynamic laws, where  $\alpha_1$  and  $\alpha_2$  are the linear expansion coeffs. before and after transformation. The heat of transformation  $Q$  for the  $\gamma \rightarrow \delta$  iron phase change is calcd. as 375 Cal./g. atom compared with 372 Cal. found experimentally by Durrer (Dissertation-Aachen 1918). P. H. Rathmann

**CA**

PROCESSES AND PROPERTIES INDEX

The determination of acetone bodies in urine. Yu. Troitzkil and R. Mendelson. *Ukrain. Biochem. J.* 9, 157-61 (in German 162-3) (1936).—A method is suggested more generally applicable than the Engfeldt method. To 10-20 cc. of urine and 10 cc. of water add 5 cc. of Pb acetate, 1 cc. of 15% NaOH and 44 cc. of water. After filtering quantitatively add 5 cc. of Pb acetate and 1 cc. of NaOH. Filter and distill 25 cc. of the distillate with 1 cc. of 10% AcOH and 20 cc. of distd. water; distil the acetone into a separate container with hypodite (20 cc. of 0.01 N I soln., 10 cc. of 15% NaOH and 10 cc. of distd. water). At the moment at which boiling begins introduce drop by drop into the distilling flask 1 cc. of concd. H<sub>2</sub>SO<sub>4</sub> and 5 cc. of 2% K<sub>2</sub>CrO<sub>7</sub> and every 5 min. add 5 cc. of dichromate. After 20 min. add 5 cc. of concd. HCl to the distillate and after 5 min. titrate the I liberated with 0.01 N thioallate in the presence of starch (1 cc. of 1 = 0.006 mg. of acetone).

E. R. Stefanowsky

METALLURGICAL LITERATURE CLASSIFICATION



PHASES AND PROPERTIES OF SOLIDS

2

**Equation of State and Heat of Phase Transformations in Solids. Y. A. Izrael'skiy (Zhurnal Tekhnicheskoy Fiziki (J. Tech. Physics), 1936, 6, (1), 123-130). [In Russian.]** From the equation of state of a solid, and taking into account its crystalline structure, its heat of transformation ( $Q$ ) is given by the expression:  $Q = 9RT^2(a_1 - a_2)$ , where  $T$  is the temperature and  $a_1$  and  $a_2$  are the coeff. of expansion and  $a_1$  and  $a_2$  constants characterizing the crystal lattice before and after transformation.—N. A.

METALLURGICAL LITERATURE CLASSIFICATION

GORYAYNOV, K.E., doktor tekhn.nauk, prof.; TROTSKY, T.T., inzh.

Kinetics of the initial heating of lightweight silicate concrete  
made with porous aggregates in the process of autoclave treat-  
ment. Stroimaterialy. 8 no.11:12-14 N 62. (MIRA 15:12)  
(Building materials--Thermal properties)

PRECISES AND PROPERTIES INDEX

5

8

**Influence of Preliminary Treatment on the Graphitisation of Whiteheart Malleable Cast Iron in Malleablising.** G. N. Trotsky and I. S. Kvater. (Metallurgist, Russia, 1937, vol. 12, No. 2, Feb., pp. 66-74). (In Russian). The authors discuss the results of attempts to decrease the time of annealing by increasing artificially the number of nuclei for the crystallisation of graphite. These are formed at the cementite-austenite boundaries and their formation is favoured by heat treatment (normalising, quenching, or rapid heating by electrical methods). Normalisation gives little effect, but quenching in oil from 930° C. reduces the annealing time to 15 hr. and this method can be applied to castings of small section and simple shape. Water-quenching reduces the annealing time to 9-10 hr., but, owing to the danger of the castings cracking, cannot be used in practice. The decrease in size and increase in number of graphite flakes produced by these treatments result in no changes in the mechanical properties of the material.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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U S DEPT OF COMMERCE

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U S GOVERNMENT PRINTING OFFICE

*Mechanical Goods, Miscellaneous*

3570. Printing machine. SEMPERIT OSTER-  
BAU, INC. AMERIKANISCH GUMMIWERKE A.G.,  
inv. F. J. TÖRZEMÜLLER, Austrian P. 170133, Appl.  
13 10 48; Germany 26.3.41; Acc. 25.1.52. The  
machine has a bandlike endless carrier for the  
printing forme. Printing is carried out on elastic  
flexible litho-formes by the pressure cylinders which  
carry the paper tape, at those zones along the carrier  
for the forme where the forme comes out of the  
bending zone and takes up a plane shape. 60M25.1

1ST AND 2ND LETTER																										3RD AND 4TH LETTER																										5TH AND 6TH LETTER																									
AUTHOR'S NAME																										TITLE																										SUBJECT																									
<p>09</p> <p>Tarasov, J. S., and Trublayana, V. J. ELECTROTHERMAL ENRICHMENT OF GRAPHITE. <i>J. Applied Chem.</i> (U. S. S. R.), 4 [1]35-80 (1931).—There are three methods for enriching graphite, (1) chemical, (2) mechanical (flotation), and (3) electrothermal. The chemical purification produces a pure graphite but is complicated and expensive; the mechanical method produces graphite of low qualities. The authors used the electrothermal method the principal features of which are as follows: (1) Natural graphite is heated to over 1000° or 1600°. (2) The impurities, such as metallic oxides, silicic acid, sulfide compounds, etc., are reduced by carbon. (3) Oxygen (as CO) and sulfur as well as silicon are eliminated from the reaction zone and form with the carbon carburetted compounds which dissociate into metal and amorphous graphite at 2000°. At 2500° to 3000°, the metals, silicon, and other impurities are completely eliminated as vapors. The granulometric composition of graphite changes after refining, the fine fractions decreasing due to the volatilization of the elements of the ashes. The graphite crystals dis-aggregate under the action of the temperature and become very thin. With this method, graphites containing -0.01% ashes were obtained.</p>																																																																													

TROTS'KO, V.I., Cand. Med. Sci., -- (uiss) "Immuno- and Antibiotic-Therapy  
of an experimental protein infection," Rostov-on-Don, 1961, 19 pp (Rostov-on-Don  
State Medical Institute) 370 copies (KL-Supp 9-61, 193)

TROUP, F.

City of motorcycles celebrated May Day. p.323.  
(Svet Motoru, Vol. 11, No. 11, May 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.

TROUP, F.

Looking back over the past quarter century. n. 528. (SVET MOTOKU,  
Vol. 11, No. 17, Aug 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (LEAL) LC, Vol. 6, No. 12, Dec 1957. Uncl.



Troup, F.

Troup, F. Second motorcycle of the unified series: JAWA CZ 125 ccm. p. 465.

The Moskvic-402, new passenger automobile. Tr. from the Russian.  
p. 466.

Vol. 10, no. 15, July 1956  
SVET MOTORU  
TECHNOLOGY  
Czechoslovakia

So: East European Accessions, Vol. 6, May 1957  
No. 5

Troup, F.

Troup, F. Who, what, how, where? p. 573.

Vol. 10, no. 18, Aug. 1956

SVET MOTORU

TECHNOLOGY

Czechoslovakia

So: East European Accessions, Vol. 5, May 1957  
No. 5

PRAT, V.; HEJL, Z.; DEJDAR, R. Technická spolupráce: VAGNEROVA, E.; TRCUSIL, V.

Our experiences with transfemoral aortography by the Seldinger  
technic. Rozhl. chir. 43 no.12:812-817 D '64.

1. Ústav pro choroby obehu krevního v Praze (ředitel prof. dr.  
J. Brod, DrSc.)

HORN, Vitezslav; BILEK, Otokar; TROUPOVA, Ruzena

A contribution to the question of primary gastric lymphogranuloma.  
Neoplasma, Bratisl. 5 no.3:238-244 1958.

1. Faculty of medicine of the Masary University, Brno Patho-Anatomical  
Institute, Institute of Experimental Pathology, Radiological Department.  
Dr V Horn and Co-workers, Brno, Pekarska 53.

(STOMACH NEOPLASMS, case reports  
Hodgkin's dis.)

(HODGKIN'S DISEASE, case reports  
stomach)

Chemical Abstracts  
May 25, 1954  
Cement, Concrete and  
other Building Materials

(2)  
✓ Chemical treatment of reinforcement of thick concrete beams. B. P. Troupyanskii (Eng.-Bldg. Inst., Kharkov). *Stroitel. Prom.* 31, No. 9, 27-8 (1953).—Reinforcement wires are roughed by treatment in 15-20% HCl at 15-20° for 36-48 hrs. At 40-45°, the process requires only 12-18 hrs. Subsequent rinsing for 30-40 min. in alk. water (1.0-1.5% soln. of calcined soda or lime water) considerably reduces the rate of corrosion in the atm. Further treatment for 30-40 min. but in 5-10% orthophosphoric acid retards corrosion still more. For rapid localization of pickling brittleness, rinsing should be in alk. water at 90-100°. Localization is also possible by rinsing in running water for 3-4 days or exposure to atm. for 1 month. Strength limit of wires does not change on the av. if acid concn. is not above 20%.  
B. Z. Kamich

TROUPYANSKIY, B.F., dotsent.

Use of unprestressed bars of increased strength in nonrigid  
reinforced concrete elements. Stroil.prom.32 no.1:40-43 Ja '54.  
(MLRA 7:2)

1. Khar'kovskiy inzhenerno-stroitel'nyy institut.  
(Reinforced concrete construction)

TROFIMOVSKIY, A. F.

Trofimovskiy, A. F.

"Investigation of Ordinary Reinforced-Concrete Beams with Increased Reinforcement." Min Higher Education USSR. Khar'kov Construction Engineering Inst. Chair of Reinforced-Concrete Structures. Khar'kov, 1955 (Dissertation for the degree of Candidate in Technical Sciences)

SO: Knizhnaya letopis' No. 27, 2 July 1955

GUN, M.G., inzh.; SALENKOV, Yu.S., inzh.; TROUPYANSKIY, B.F., kand.  
tekh. nauk

Modernizing multiple molds at the Kharkov Housing Construction  
Combine. Bet. i zhel.-bet. 9 no.3:112-114 Mr '63.  
(MIRA 16:4)

1. Khar'kovskiy domostroitel'nyy kombinat (for Gun, Salenkov).
2. Khar'kovskiy inzhenerno-stroitel'nyy institut (for Troupyanskiy).  
(Kharkov--Concrete plants)



DEYCH, M.Ye., doktor tekhn. nauk, prof.; TROYANOVSKIY, B.M., kand. tekhn.  
nauk, dotsent; ABRAMOV, V.I., inzh.; KAZINTSEV, F.V., inzh.;  
KISELEV, L.Ye., inzh.

Studying the partial admission in two-row speed stages.  
Energomashinostroenie 7 no.3:24-27 Mr '61. (MIRA 16:8)  
(Steam turbines—Testing)

TROUPYANSKIY, M. S.

Arteriography and oscillography in the treatment of thromboan-  
gitis obliterans. Khirurgiia, Moskva no.9:54-61 Sept. 1960.  
(CIWL 20:1)

1. Of the Second Surgical Clinic Moscow Oblast Scientific-  
Research Clinical Institute (Director -- Prof. F. M. Plotkin).
2. M. S. Troupyanskiy is a Candidate Medical Sciences.

TROUSIL, Jaroslav, promový chemik

Technology of the production of polycrystalline photoconductive  
CdS and CdSe. Sbor vak elektrotechniky 1962-1964. '64.

1. Research Institute of Radiolysis and Their Use, Prague.  
Submitted April 1962.

TROUSIL, Jindrich, dr.

Let us limit the controversies between socialist organizations.  
Sklar a keramik 15 no.2, 33.12.1965.

1. Ministry of Consumer Goods Industry, Prague.

TROUSIL

CZECHOSLOVAKIA / Magnetism. Ferromagnetism.

F-4

Abs Jour : Ref Zhur - Fizika, No 3, 1957, 6859

Author : Bednar, Jan; Broz, Jaromir; Smirous, Karel; Trousil,  
Zdenek

Title : Response to Spacek's Remark.

Orig Pub : Ceskosl. casop. fys., 1956, 6, No 2, 228 - 230

Abstract : See Abstract 6858

Card : 1/1

KOUBA, Jan; BROZEK, Jan; TROUSIL, Antonin

Mass operation, the basic element of general repair and maintenance.  
Poz stavby 11 no.7:357-363 '63.

1. Fasadostav Praha.

L 7866-66 EWT(m)

ACC NR: AF6001209

SOURCE CODE: CZ/0038/65/011/006/0223/0224

AUTHOR: Hlavaty, Vlastislav; Trousil, Jaroslav

ORG: [Hlavaty] Biophysics Institute FVL UK, Prague (Biofyzikalni ustav FVL UK);  
[Trousil] Institute for Research, Production, and Utilization of Radioisotopes,  
Prague (Ustav pro vyzkum, vyrobu a vyuziti radioizotopu)

TITLE: The magnetron--a source of x radiation

SOURCE: Jaderna energie, v.11, no.6, 1965, 223-224

TOPIC TAGS: magnetron, x radiation, radiation dosimetry, ionizing radiation,  
 radiation source

ABSTRACT: Doses of x radiation were measured around a radar installation designed with magnetrons containing resonant cavities. The doses were measured with the aid of film-badge dosimeters, and the radiation energy to which the radar personnel are exposed was determined. It was found that the ionizing radiation is emitted from various parts of the magnetron. Monitoring of the personnel showed that the tolerance doses specified were not exceeded. With consideration for the x radiation, design modifications are recommended in the production of this type of magnetrons. The work was presented by I. Bucina. Orig. art. has: 1 figure. [NA]

SUB CODE: 18, 06, 09 / SUBM DATE: none / ORG REF: 004 / OTH REF: 006

SOV REF: 003

UDC: 621.385.64

Card 1/1

TROUSIL, Jindrich

Preparation of the economic code and regulations of the Ministry  
of Consumer Goods Industry on delivery of products. Kozarstvi  
13 no.10:289-290 0 '63.

1. Ministerstvo spotrebniho prumyslu, Praha.



TROUSIL, Jindrich, dr.

Drafting of the Economic Code and basic conditions for delivery of products by enterprises controlled by the Consumers' Goods Ministry. Sklar a keramik 13 no.9:225-226 8'63.

1. Ministerstvo spotřebního průmyslu, Praha.

L 37174-66 EWT(m)

SOURCE CODE: CZ/0038/66/000/003/0099/0099

ACC NR: AP6027872

AUTHOR: Trousil, Jaroslav--Trousil, Ya.; Bucina, Ivan--Buchina, I.

ORG: Institute for Investigation, Production and Use of Radioisotopes, Prague  
(Ustav pro vyzkum, vyrobu a vyuziti radioizotopu)

TITLE: Film dosimetry<sup>19</sup> of x-ray radiation

SOURCE: Jaderna energie, no. 3, 1966, 99

TOPIC TAGS: radiation dosimetry, photographic film, x ray application, x ray filter

ABSTRACT: UUVVR Report No 40/1963. The paper presents the results of work connected with the development and experimental checking of the method and correction of the wave dependence by means of a vacant field and filters of 0.05, 0.5 and 1.5 mm of Cu and 0.5 mm of Pb. A method also was developed for calibration of the films and reading of the doses which assures satisfactory accuracy and an adequate range of measurements. [Based on authors' Eng. abst.] [JPRS: 36,845]

SUB CODE: 14, 18 / SUBM DATE: none

Card 1/1 *1111*

UDC: 539.12.082:77: 621.286.82  
*0984* *7385*

CZECHOSLOVAKIA UDC 613.64(612.014.481/.483):539.17.08(673)

CHYSKY, Jaromir; TROUSIL, Jaroslav; Research Institute for Radiation Hygiene (Vyzkumny Ustav Hygieny Zarení), Prague, Director (Reditel) Docent Dr J. MULLER; Institute for Research, Production, and Uses of Radioisotopes (Ustav pro Vyzkum, Vyrobu a Vyuziti Radioizotopu), Prague, Director (Reditel) J. HOKR.

"Investigation of Occupational Exposures to Ionizing Radiation in Czechoslovakia."

Prague, Pracovní Lékarství, Vol 18, No 5, Jun 66, pp 211 - 219

Abstract /Authors' English summary modified/: The organization of film dosimetry is described; the films are carried in a special badge. The reading is exact to within + 20%. Exposures exceeding 400 mr are reported to the Institute for Radiation Hygiene. In 1964, 3191 workers were controlled; this was about one-third of the total work force employed in areas exposed to radiation. 82.4% of the workers received less than 1/10th of the permissible radiation. Only 7 people (0.22%) received a dose exceeding the permissible value. 4 Figures, 3 Tables, 3 Western, 1 Czech, 1 East German reference. (Manuscript received 21 Jul 65).

1/1

HORNYCH, A.; PRAT, V.; HEJL, Z.; DEJDAR, R.; Technicka asistence:  
CAPKOVA, E.; TROUSIL, V.

Effect of aortography on kidney function with reference to  
various contrast media. Cas. lek. cesk. 102 no.34:928-934  
23 Ag '63.

1. Ustav pro choroby obehu krevniho v Praze, reditel prof. dr.  
J. Brod, DrSc.

(ANGIOGRAPHY) (RENAL ARTERY OBSTRUCTION)  
(HYPERTENSION) (KIDNEY NEOPLASMS)  
(ADRENAL CORTEX NEOPLASMS)  
(KIDNEY FUNCTION TESTS)

WIDIMSKY, J.; KASALICKY, J.; DEJDAR, R.; ZAJIC, F. Technical assistance:  
VALOVA, E.; JOZIFKOVA, B.; TROUSIL, V.

Central haemodynamics during muscular exercise in subjects  
with normal heart and lungs. Cor vasa 7 no.2:143-149 '65

1. Institute for Cardiovascular Research, Czechoslovakia.



The sulfates and selenates of scandium. Z. Trossel, *Collection Czechoslov. Chem. Commun.* 10, 260 (1945).  $\text{Sc}_2(\text{OH})_2\text{SO}_4 \cdot 2\text{H}_2\text{O}$ , microcryst., is prepd. by addn. of the calcd. amt. of  $\text{Sc}_2(\text{OH})_6$  to a soln. of the normal sulfate and evapg. to crystn.  $\text{Sc}_2(\text{SO}_4)_3$ , extremely fine-grained crystals, is best obtained by heating the tetrahydrate with 70%  $\text{H}_2\text{SO}_4$  with vigorous stirring, to 120° and then cooling. Microcryst.  $\text{Sc}_2(\text{SO}_4)_3 \cdot 4\text{H}_2\text{O}$  is prepd. by dissolving the oxide in 70%  $\text{H}_2\text{SO}_4$ , evapg. to crystn., washing with alc. and ether and drying in air. It is stable at 250°, loses 3 mols. of  $\text{H}_2\text{O}$  at 100°, the fourth only at 250°.  $\text{Sc}_2(\text{SO}_4)_3 \cdot 7\text{H}_2\text{O}$ , radiating acicular crystals, is prepd. by evapg. at 0°, in a desiccator over  $\text{H}_2\text{SO}_4$ , of an aq. soln. of the tetrahydrate. The salt decomps. on standing even in the cold in a closed tube giving the tetrahydrate. The relatively stable acid,  $\text{H}_2\text{Sc}(\text{SO}_4)_2 \cdot 2\text{H}_2\text{O}$ , diamond-bright, keating-like plates, is prepd. by the action of 40%  $\text{H}_2\text{SO}_4$  on the cryst. normal sulfate, the reaction is complete in several days and is easily followed under the microscope. It kept in a desiccator over phosphoric acid for some

months it is transformed to the rose-gray powdery anhyd. acid.  $\text{Sc}_2(\text{OH})_2\text{SO}_4 \cdot 2\text{H}_2\text{O}$ , cryst. powder, d. 2.58, is prepd. as is the corresponding sulfate.  $\text{Sc}_2(\text{SeO}_4)_3$ , tetragonal plates, d. 3.27, is prepd. by the addn. of 100 g. 90%  $\text{H}_2\text{SeO}_4$  to 100 g. satd. aq. soln. of the selenate and evapg. on the air bath at 100-110°.  $\text{Sc}_2(\text{SeO}_4)_3 \cdot 5\text{H}_2\text{O}$ , microcryst. prisms, d. 2.63, is prepd. by dissolving  $\text{Sc}_2\text{O}_3$  with excess  $\text{H}_2\text{SeO}_4$  and evapg. to crystn.  $\text{Sc}_2(\text{SeO}_4)_3 \cdot 10\text{H}_2\text{O}$ , slender glossy hexagonal prisms, d. 2.21, stable in air, is prepd. by addn. of concd.  $\text{H}_2\text{SeO}_4$  to a 10% soln. of the anhyd. selenate (1 g. acid to 10 g. salt), the soln. is then added to concd.  $\text{AcOH}$  until faint turbidity persists and allowed to stand.  $\text{H}_2\text{Sc}(\text{SeO}_4)_2 \cdot 2\text{H}_2\text{O}$ , rhombohedrons with the corresponding sulfate, is prepd. by decomposing with the corresponding sulfate, is pentahydrate in concd.  $\text{H}_2\text{SeO}_4$ , a suspension of 130 heating at 100%  $\text{H}_2\text{SeO}_4$ . It is dehydrated only by long heating at 100°.  $\text{Sc}_2\text{C}_2\text{O}_4(\text{HSeO}_4)_2 \cdot 2\text{H}_2\text{O}$  is obtained if, in the prepn. of the decahydrate, formic instead of acetic acid is used. Strongly acid solns. of sulfate or selenate sometimes gave small hexagonal plates of an unidentified salt which soon transformed to the scandium acid. The acid  $\text{H}_2\text{Sc}(\text{SO}_4)_2$  (With, C. J. R., 1952) was never obtained in these expts. D. W. Prater

TR0511, 2

CZECH

537.323 : 537.311.33  
6635. The effect of thermal emission of holes on the  
thermal e.m.f. of *n*-type semiconductors. J. TAUC  
AND Z. TROUSIL. Czech. J. Phys., 3, No. 2, 120-5  
(1953) In Russian.

On measuring the thermal e.m.f. of *n*-type semiconductors, it was observed that the character of the dependence on the temperature was different when using a cold point and a heated flat electrode from that when using two flat electrodes. This effect can be explained theoretically by the following conception. Under the point electrode a large temperature gradient is created which, due to the diffusion of holes from the warmer parts, causes a greater concentration of the current carriers in the cooler parts than corresponds to the equilibrium value. The potential barrier under the point prevents the electrons from entering the contact but does not prevent the penetration of the holes. The excess of holes causes an electric voltage analogous to that in a barrier layer cell. On the assumption that most of the temperature gradient occurs at a distance which is small compared to the diffusion distance of the holes, that the temperature gradient between the surface of contact of the tungsten point and the sphere of radius  $r_0$  is negligible and that the concentration of the holes compared to the concentration of *n*-type impurities is small, an expression was derived for the additional voltage  $\Delta U$  caused by the excess of holes. Within the limits of validity of the derived theory, i.e. for lower temperatures, quantitative agreement was obtained with experiment. For higher temperatures the measured curve always lies below the theoretical. A possible explanation is that the potential barrier loses its efficiency at higher temperatures, a fact supported by measurements made at high temperatures. BB A.1



*Zdenek Trousil*

4

✓ Technique for the addition of some metals into, and their  
extraction from, the crystal lattice of germanium. Zdenek  
Trousil (Acad. Sci. Prague). Czechoslov. J. Phys. 4,  
251 (1954) (in German). -- The surface of the Ge crystals is  
coated with spongelike Ge produced by the reduction of an  
oxide layer in  $H_2$ . The metal additive is brought into con-  
tact with the spongy surface and heated to a temp. above its  
m.p. The capillarity of the spongy material distributes the  
molten metal over the entire surface of the crystal. The  
concn. of the atoms of the impurity metal in the crystal lat-  
tice of Ge is detd. by the equil. and the distribution coeff.  
between Ge and a soln. of Ge in the molten metal. Sn, In,  
and Cu were used. F. Schossberger

*raw*

(P)

CZECH

8770. The effect of environment on the production of thermal lattice defects in crystals. Z. TROUSIL. Letter in Czech. J. Phys., 4, 98-9 (Feb., 1954).

Crystals of n-type germanium partly immersed in melts of various metals and held at high temperature, remain n-type in those regions in contact with the melt but become p-type elsewhere. Conversion to p is attributed to a diffusion inwards of thermal defects produced at the surface, and it is supposed that this process does not occur at the immersed surfaces which therefore remain n.

548.7 : 537.311.33  
D. LE CLAIR

TROUSIL, Z.

"Variation of the Type of Inductivity of Germanium at Low Temperatures" P. 105  
( CESHOSLOVENSKY CASOPIS PRO FYZIKU Vol. 4, No. 1, Feb. 1954 - Praha, Czech. )

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 4,  
April 1955, Uncl.

"APPROVED FOR RELEASE: 03/14/2001

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1003/L Z

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001756810002-1"

TROUSIL, Z.

Trousil, Z. Formation of electrons and holes during chemical reactions on the surface of germanium. p. 471. CESKOSLOVENSKY CASOPIS PRO FYZIKU. Praha. Vol. 4, no. 4, Sept. 1954.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 11, Nov. 1955, Uncl.

TROUSIL, Z.

Trousil, Z. Technique of metal admixture to and extraction from germanium crystals. p. 472. CESHOSLOVENSKY CASOPIS PRO FYZIKU. Praha. Vol. 4, no. 4, Sept. 1954.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 11, Nov. 1955, Uncl.

TROUSIL, Zdeněk

Formation of electrons and electron holes by chemical reaction on the surface of germanium. Zdeněk Trousil (Acad. Sci., Prague). Czechoslov. J. Phys. 31:1001-1004 (1978).--An increase of the concn. of the holes during the anodic soln. of Ge surfaces can be achieved by increase of the temp. or by an elec. injection of holes. The effect is demonstrated by an expt. in which the point of a Pt wire is surrounded by a drop of HNO<sub>3</sub> and in contact with an etched Ge plate. At the contact point a current is formed by the discharge of the pos. ions on the surface of the wire. The pos. charge is distributed in form of electron holes in the Ge, and an intensive oxidation of the surface follows. The GeO<sub>2</sub> formed is little sol. in the acid and forms a dark-gray ring around the point. The ring diam. is proportional to the lifetime of the holes. The carrier concn. can be increased by using mixts. of HP and HNG, or of Cu<sup>++</sup> ions as a catalyst. F. Schossberger

TROUSIL, Z,

✓ 9654. A contribution to the question of thermal  
acceptors in germanium. Z. Trousil. Czech. J. Phys.,  
5, No. 3, 393-403 (Aug., 1955). 537.311.33  
The motion and decay of thermal acceptors in  
germanium was studied using the method of saturation  
and the extraction of solid germanium by means  
of a liquid alloy of Ge/Sn. The qualitative results  
obtained confirm that the production of thermal  
acceptors in germanium is conditioned by the presence  
of copper and in addition prove the applicability of  
this method to the solution of similar problems. A.

Sm  
fy



730614, Z.

200

✓ Bulk photovoltaic phenomenon. Zdeněk Trousil. Czechoslov. J. Phys. 6, 46-8 (1956) (in English).—A vol. photovoltaic effect was observed between the ends of a Ge prism cut along the axis of a single crystal, although the cond. of the crystal was the same throughout. This photoelec. effect is attributed to a gradient of impurities which do not considerably affect cond. in this range. With a better technique it could be shown that photoelec. effects are present in regions where slight changes in resistance can be detected. S. Pakzyer

PP  
Bys  
Paw  
JSA

TRUSSARDI

*Ch* Laboratory equipment for the production of germanium crystals. Zdeněk Trusil. Czechoslov. J. Phys. 6, 61-4 (1960) (in Russian). Graphite boats in evacuated quartz tubes are used for zone purification. Local heating is obtained by electron bombardment from a movable hot cathode to the boat connected to the anode. The cathode moves at a speed of 5 cm/hr., the e.m.f. is 5000-7000 v., and the power is 300-600 w. In 6-8 passes, 120 g. of Ge can be purified to a resistivity of 30-50 ohms. Crystals are drawn by the Czochralsky method from Ge, molten in quartz crucibles in small W-coil heated ovens in an atm. of  $H_2$ . S. Pakswen

*RM*

"APPROVED FOR RELEASE: 03/14/2001

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APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001756810002-1"

TROUSIL, Z.

TROUSIL, Z. Contribution to the problem of thermal semiconductors in germanium. p. 192.

Vol. 5, no. 2, Mar. 1955  
CESKOSLOVENSKY CASOPIS PRO FYSIKU  
SCIENCE  
Czechoslovakia (Prague)

So: East European Accessions, Vol. 5, no. 5, May 1956

TL. Z.

Equipment for the laboratory preparation of germanium crystals. . . . .

СОВЕТСКОЕ ОБОРУДОВАНИЕ ДЛЯ ПОЛУЧЕНИЯ КРИСТАЛЛОВ ГЕРМАНИИ . . . . . vol. 5, no. 5, Sept. 1955

Czechoslovakia

no. 2 SEPTEMBER 1955 . . . . . vol. 5, no. 5 . . . . . Jul. 1956

TROUSIL, Z.

Use of titanium hydride in experimental techniques. p. 699

Vol. 5, no. 6, Nov. 1955  
ČESKOSLOVENSKÝ ČASOPIS PRO FYSIKU  
Praha, Czechoslovakia

So: Eastern European Accession Vol. 5, No. 4, 1956

*Trousil, Z.*

CZECHOSLOVAKIA/Fitting Out of Laboratories. Instruments,  
Their Theory, Construction and Use

H.

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4937

Author : Trousil Zdenek

Title : Use of Titanium Hydride in Experimental Technique

Orig Pub : Chekhosl. fiz. zh., 1956, 6, No 2, 196-198

Abstract : Use of titanium hydride (TH) as thermoregulator and regulator of heat transfer is based upon the reversible process of emission and absorption of  $H_2$  by pulverulent TH at 650-700° (in 1 g TH are dissolved ~5 cc  $H_2$  per 1° at a pressure of 1 atmosphere). The thermoregulator operates according to the principle of analogy of operation of regulated heater and miniature furnace (MF) with TH. On increase in voltage of the feed circuit the temperature in MF rises which results in an increase of  $H_2$  pressure in MF. The closed space of MF is connected to pneumatic relay which disconnects the heater

Card 1/2

- 14 -

CZECHOSLOVAKIA/Fitting Out of Laboratories. Instruments.  
Their Theory, Construction and Use

H.

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4937

being regulated. For a regulation of heat transfer  
the MF space is connected to an evacuated vessel.  
Change in the temperature of MF alters the amount  
of  $H_2$  in the vessel and changes thereby the heat  
transfer between its walls.

Card 2/2

- 15 -



Trousil, Z.

Proof of anomalous thermoelectric tension in germanium. P. 93  
CESKOSLOVENSKY CASOPIS PRO FYSIKU. (Ceskoslovenska akademie ved.  
Ustav technicke fysiky) Praha  
Vol. 6, no. 1, Jan. 1956

Source: EEAL - LC Vol. 5. No. 10 Oct. 1956

"APPROVED FOR RELEASE: 03/14/2001

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- P 1000 7

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CIA-RDP86-00513R001756810002-1"

7/REUSEIL ZADINEK  
Czechoslovakia/Electricity - Semiconductors, G-3

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35075

Author: Trousil, Zdenek

Institution: None

Title: Proof of the Anomalous Thermal EMF on Germanium

Original

Periodical: Czech. Phys. JI., 1956, 6, No 2, 170-172; English; Russian resumé

Abstract: See also Referat Zhur - Fizika, 1956, 32031

Card 1/1

... were soldered (or as not to say a  
was about 15 cm-cm., were soldered (or as not to say a  
... were soldered (or as not to say a

e.m.f. measured between the contacts at the Al-block end  
of the Ge strip was plotted against the temp. difference

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477

**APPROVED FOR RELEASE: 03/14/2001**

**CIA-RDP86-00513R001756810002-1"**

Trousil, Z.

"Experience with zonal melting.

p. 633 (Chemie, Vol. 9, no. 5, Nov. 1957)

Monthly Index of East European Accessions (EEAI) IC, Vol. 7, No. 6, June 1958

HRUBY, A.; TROUSIL, Z.

Preparation of pure silicon monocrystals. Coll Cz Chem 25 no.9:  
2313-2318 S '60. (EEAI 10:9)

1. Institut für technische Physik, Tschechoslowakische Akademie der  
Wissenschaften, Prag.

(Silicon)



41880

Z/038/62/000/009/003/003  
I037/I242

9.6.50

AUTHORS:       Skr.vánková, Marie and Trousil, Zdeněk

TITLE:         Czechoslovak semiconductor detectors of charged  
                  particles

PERIODICAL:    Jáderná Energie, no. 9, 1962, 319-326

TEXT:           There are many advantages of using semiconductor  
detectors with p - n surface transitions, for the determination  
of  $\alpha$  and other charged particles. The preparation of detectors  
with a surface potential barrier of n-type silicon covered by a  
thin gold layer is described. The back current at darkness, which  
specified the quality of the transition, was about  $1 \mu\text{A}/\text{cm}^2$  after  
a pre-polarization of 500 V. The energy discrimination values for

Card 1/2

✓

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I037/I242

Czechoslovak semiconductor....

alpha particles and 6.5 MeV protons was between 0.3% to 1% depending on the area, specific resistance (orders of  $10^2$  -  $10^4$   $\Omega$ -cm) and bias. Detectors with a double effective layer were also tested. They have a poorer energy discrimination but are simpler to operate. This arrangement may be used as a combination of E and  $\frac{dE}{dx}$  detectors. There are 14 figures.

ASSOCIATION: Ústav jaderného výzkumu ČSAV (Nuclear Energy Institute, CSAS) Prague and Ústav technické fyziky ČSAV (Institute of Applied Physics, CSAS) Prague

Card 2/2

✓

Z/038/62/000/009/001/005

AUTHORS: Skřivánková, M., Trousil, Z.

TITLE: Czechoslovak semiconductor detectors  
of charged particles

PERIODICAL: JADERNA ENERGIE, no. 9, 1962, 326

TEXT: In the article the preparation of detectors with surface potential barrier on n-type silicon is described. Using these detectors some measurements were carried out, namely of energy resolution which is 0,3 % in the best case for alpha particles, the measurement of the effective layer depth which is in good agreement with calculated value, further the measurement of resolution dependence on the bias, on temperature and on the collimation of incident alpha particle beam. Also the use of this detector as a spectrometer of 6,5 MeV protons was examined. The second part of the article describes the arrangement of the detector enabling to reach the double effective layer on the same silicon and at the same bias. This arrangement may be used as a

Card 1/2

Z/038/62/000/009/004/005

Czechoslovak semiconductor detectors...

combination of E and  $\frac{dE}{dx}$  detectors on a single silicon slab.

[Author's summary]

Card 2/2

SKRIVANKOVA, M.; TROUSIL, Z.---

Conference on semiconducting detectors in Dubna. Jaderna energie  
8 no.7:258-259 J1 '62.

SKRIVANKOVA, Marie; TROUSIL, Zdenek

Czechoslovak semiconductor detectors of charged particles.  
Jaderna energie 8 no.9:319-326 S '62.

1. Ustav jaderného výzkumu, Československá akademie věd,  
Praha (for Skrivankova). 2. Ustav technické fyziky,  
Československá akademie věd, Praha (for Trousil).

9.6150

35758  
S/194/62/000/005/069/157  
D295/D308

AUTHORS: Skřivánková, M., and Trousil, Z.  
TITLE: Experience with semi-conducting detectors. The use of semiconductor diodes for the spectrometry of charged particles.  
PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1962, abstract 5-4-43 i (Chekhosl. fiz. zh., B 11 no. 10, 1961, 755-763)

TEXT: The diodes investigated were prepared from n-silicon having resistivity of  $2 \times 10^2$  to  $2 \times 10^4 \Omega \text{ cm}$ . After etching, a thin layer of gold was deposited on the surface. Charged particles were transmitted by the gold layer and were retarded in the semiconductor. The amplitudes of the electric pulses arising in this connection were measured. For a diode-surface area of  $50 \text{ mm}^2$  the energy resolving power achieved for  $\alpha$ -particles and also protons was 0.6 %. For a diode surface of  $\sim 1 \text{ cm}^2$  the resolving power was somewhat poorer. It was established that one of the reasons for the deterioration of the resolving power can be the spread in the angles of incidence of  
Card 1/2

Experience with semi-conducting ...

S/194/62/000/005/069/157  
D295/D308

the particles of the semiconductor. As the barrier voltage increases, the deterioration of resolving power due to this cause becomes less marked. The electric pulses were shown to be proportional to the energy of the particles for a path length not exceeding the thickness of the space-charge layer. As the barrier voltage increases, the thickness of the space-charge layer increases and accordingly the energy of the particles that is resolved increases. For a silicon resistivity of  $2 \times 10^3 \Omega \text{ cm}$  the detector can be used for the spectrometry of protons having up to 9 MeV energy. 7 references. (The Nuclear Research Institute, the Institute of Technical Physics the Czechoslovak Academy of Sciences, Czechoslovakia). [Abstractor's note: Complete translation].

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A001/AIG1

AUTHORS: Skřivánková, M., Trousil, Z.

TITLE: Experience with semi-conducting detectors

PERIODICAL: Referativnyy zhurnal, Fizika, no. 5, 1962, 8, abstract 5B67  
("Chekhosl. fiz. zh.", 1961, B 11, no. 10, 755-763, English;  
Russian summary)

TEXT: The authors investigated spectrometric characteristics of silicon semi-conducting detectors with surface barrier. n-silicon with specific resistivity of  $2 \times 10^2$  to  $2 \times 10^4$  ohm · cm was used for manufacturing detectors. 2 - 3-mm thick plates cut out of n-type silicon single crystals were carefully polished, pickled in the mixture of sulfuric and hydrofluoric acids and washed. A surface barrier was formed by dust-spraying a thin gold film onto one of the faces. Side-by-side with detectors was used a wide-band amplifier with low level of intrinsic noise ( $10 \mu v$ ). The time of pulse growth in the amplifier amounted to 80 nsec. A 100-channel amplitude pulse analyzer was connected to the amplifier output. Best energy resolution attained with detectors of 50-mm<sup>2</sup> area amounts to 0.6% for  $\alpha$ -particles of ThC'. It is pointed out that energy

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Experience with semi-conducting detectors

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A001/A101

resolution of detectors depends essentially on the voltage applied to them. At low voltages, resolution is rapidly improving with the voltage increase. At a voltage over 25-30 v the resolution versus voltage curve forms a plateau. The course of pulse amplitude versus voltage curve is similar to the course of the resolution versus voltage curve. The relation between energy resolution and collimation degree of  $\alpha$ -particles recorded is investigated in detail. It is noted that at low voltages on detectors ( $\sim 3$  v), energy resolution improves sharply with using collimated bundles of  $\alpha$ -particles; at voltages on detectors being  $\sim 20$  v, resolution is practically independent on collimation degree of recorded  $\alpha$ -particles. The depth of detector effective region is experimentally determined for various voltages. Measurements of effective region depth were performed by determining proton energy at which linear dependence of pulse amplitude on proton energy is violated. Examples of spectra measured are presented.

Ya. M.

[Abstracter's note: Complete translation]

Card 2/2

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TROYAN, A., dotsent (L'vov); BORUKH, I., assistant (L'vov)

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soyuza potrebitel'skikh obshchestv SSSR (for Troyan).
2. Kafedra tovarovedeniya prodovol'stvennykh tovarov TSentral'-  
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